

THE EFFECT OF JIGSAW II AND STUDENTS-TEACHER RELATIONSHIP ON STUDENTS' READING COMPREHENSION

IGA. Wardhani¹, AAIN. Marhaeni², LP. Artini³

Program Studi Pendidikan Bahasa, Program Pascasarjana
Universitas Pendidikan Ganesha
Singaraja, Indonesia

e-mail: {ayu.wardhani, agung.marhaeni, putu.artini}@pasca.undiksha.ac.id

Abstrak

Studi eksperimen ini bertujuan untuk menginvestigasi pengaruh Jigsaw II dan hubungan siswa dan guru terhadap membaca komprehensif siswa kelas sebelas SMAN 1 Denpasar pada tahun ajaran 2013/2014. Penelitian ini menggunakan rancangan 2x2 faktorial. 92 siswa dilibatkan sebagai sampel penelitian. Mereka dipilih dengan teknik sampling acak. Data membaca komprehensif siswa dikumpulkan melalui tes pilihan ganda sedangkan data hubungan siswa dan guru dikumpulkan dengan kuesioner. Data membaca komprehensif siswa dianalisis dengan ANAVA dua jalur (Analisis Varian). Temuan penelitian ini adalah a) Jigsaw II berpengaruh secara signifikan terhadap membaca komprehensif siswa, b) terdapat interaksi yang signifikan antara strategi pengajaran (Jigsaw II dan konvensional) dan tingkat hubungan siswa dan guru (tinggi dan rendah) terhadap membaca komprehensif siswa, c) bagi siswa yang memiliki hubungan tinggi dengan guru, Jigsaw II berpengaruh secara signifikan terhadap membaca komprehensifnya, d) bagi siswa yang memiliki hubungan rendah dengan guru, Jigsaw II tidak berpengaruh secara signifikan terhadap membaca komprehensifnya.

Kata-kata kunci: Jigsaw II, hubungan siswa dan guru, membaca komprehensif

Abstract

This experimental study aimed at investigating the effect of Jigsaw II and students-teacher relationship on reading comprehension of eleventh grade students of SMAN 1 Denpasar in the academic year 2013/2014. This research applied 2x2 factorial design. 92 students were selected as sample through random sampling. Data of students' reading comprehension were collected by using multiple choice tests and the students-teacher relationship were collected by questionnaire. The data of students' reading comprehension were analyzed statistically by *two-way ANOVA (Analysis of Variance)* at 5% significance level. This research discovered that (a) there was a significant effect in reading comprehension between the students taught by using Jigsaw II and those who taught by using conventional strategy, (b) there was a significant interactional effect of teaching strategy (Jigsaw II and conventional) and students-teacher relationship level (high and low levels) on students' reading comprehension, (c) there was a significant effect in reading comprehension between students having high relationship with their teacher taught by using Jigsaw II and those taught by using conventional strategy, and (d) there was no significant effect in reading comprehension between students having low relationship with their teacher between the students' taught by using Jigsaw II strategy and those taught by using conventional.

Keywords: jigsaw II, students-teacher relationship, reading comprehension

INTRODUCTION

In the context of Indonesian education, language learning, especially *English Foreign Language* (EFL) is one of the sciences which should be mastered by the students. Language is a means of communication. By mastering English, people can communicate with almost all people in the world because English is as an international Language. Learning English is learning how to communicate using the target language that includes the four skills the students have to practice namely listening, speaking, reading and writing. Those skills are regulated by the Indonesian government through PERMENDIKNAS No 22 Tahun 2006 about Content Standard of Learning. In this regulation, the students are considered competent in English if they can achieve both *competency standard* and *basic competency* of each language skill established by the government.

Reading is one of the language skills which should be mastered by the students and becomes the skill which is investigated in this research. In practice, reading in Senior High School is mainly focused on reading comprehension. There is less time used for reading aloud. It is so because only reading comprehension is assessed in National Examination. So, reading meant in this research refers to reading comprehension. Reading is an active skill that should not be separated from other skills and constantly involves guessing, predicting, checking, and asking oneself questions, (Gellet, 1990). It can be said that reading is an activity that involves a variety of skills. The reader should be able to predict or even asking questions to himself about the written text he reads.

Furthermore, Meyer and Ray (1999) summarize that reading comprehension is an active process of making sense out of text. It means that the students have to comprehend the information presented by the author. The target of reading comprehension is understanding. Understanding a text does not only knowing the meaning of the each word in the text, but knowing the explicit and implicit information in the text.

Based on the definition of reading and reading comprehension, it can be concluded that reading is an active process to construct meaning from a text. Constructing meaning has purpose to understand the text wholly. It is not just in terms of vocabulary and structure, but also the content. In reading, the readers have to be able to get holistic writer's intention. So what the writers intend can be understood completely by the readers.

Reading skills become more important than other skills for students, it is because in national exam especially in English subject that the English test is mostly about testing reading skills. There are 50 items in the test, it is only 15 items are about listening skills, and the other 35 items are about reading skills such as; finding topic of the text, finding specific information of the text, finding implied information of the text, understanding references, deducing meaning from context about reading comprehension. Furthermore by reading students want to get information. The information can be about the topic of the text, main idea of paragraph, specific information in the text, implied information in the text, understanding references, deducing meaning from context etc.

To know how reading was taught and the level of students' mastery in reading, observation was done in SMAN 1 Denpasar especially in eleventh grade. Two classes, XI IPA 3 and 5 were selected as the subject of observation. Observation was done for three times in each class. In the observation, it was found out that there were more than 50 students who got score in reading lower than passing grade (80) established. It was also proven by their mid semester test showing that there are more than 50% students who could not pass the passing grade. It was surprising because SMAN 1 Denpasar is one of the prestigious high school in Bali.

Further observation was done to find out how reading was taught and the factors causing the low score of students' reading comprehension. Among the other

language skills, reading was taught mostly. It is because reading is tested mostly in National Examination. In reading, the students were given any passage or text. After the text, there were some questions related to the text which should be answered by the students. Here, the students should answer the questions individually and they were not allowed to cooperate with their friends.

From the observation, the students were still difficult to find the main idea of the text. Many students were not able to find what was referred by certain pronoun in the text. Some students used the title of the text when they had to find the topic. Some students were failed in locating the nouns referred by certain pronoun in the text. They even could not find the specific information accurately. When they were asked to find the specific information in the text, they just took the complete sentence in the paragraph, without taking the main point of the main idea or trying to paraphrase the paragraph. In some cases the students sometimes just took the whole paragraph as the answer. Some students sometimes were not consistent to find the arguments that support the thesis statement when they were asked to find the arguments that support the thesis statement. The students who had difficulties usually got "stuck" in answering the questions. It was because the students could not discuss the answer with their friends or asking their friends how they could get the answer. Here, some students who got stuck bravely asked the clue from their teachers, but some were just waiting until the teacher and their friends giving the answers.

From here, it is implied that there is a problem on the teaching method applied by the teachers. The teaching method mostly led the students to work individually. It made the students did not have chance to share their problems with their friends. As the consequence, the students got less feedback from their friends on the problems they faced. As stated by Astin (1993) that learning is slow without feedback. Even though some students shared to their teachers, but it was just for the students having close relationship with the teacher.

So, it led a research on how to teach reading in which a student could share with their friends during reading class. One way that could be done was by experimenting cooperative learning in reading instruction.

There are some types of cooperative learning, such as: jigsaw, STAD, TGT, NHT, groups discussion, etc (Killen, 1996). In this research, Jigsaw type II is selected by the researcher for some reasons. First, the materials used are in the form of narration (Slavin, 2005). Second, the idea of social construction of knowledge is facilitated by sharing process among students in learning. Third, the students have responsibility for their learning part (Killen, 1996). Fourth, there is interdependency among students in which the students can help the others (Killen, 1996)

Jigsaw is a kind of cooperative learning method that requires learners to communicate with each other in order to fill in missing information and to integrate it with other information. Sahin (2010) argues that "Jigsaw technique allows students to actively participate in learning process. It is good for the students in constructing their knowledge.

The Jigsaw method is an efficient way to learn the course material in a cooperative learning style. The jigsaw process encourages listening, engagement, and empathy by giving each member of the group an essential part to play in the academic activity. Group members must work together as a team to accomplish a common goal; each person depends on all the others. No student can succeed completely unless everyone works well together as a team. This "cooperation by design" facilitates interaction among all students in the class, leading them to value each other as contributors to their common task (Pennstate, 2007).

Based on the explanation about Jigsaw strategy, theoretically Jigsaw II has positive effect on students' reading comprehension. However, it should be proven empirically so it is known its effect. It led the researcher to conduct a research on Jigsaw II effect on reading comprehension.

Then, it is important to discuss whether teaching method is the only one factor affecting students' achievement. Hughes & Chen (2011) state a major factor affecting students' development, school engagement and academic motivation is teacher-students relationships (TSR). It is a basis for opened communication between the students and teacher. by opened communication, the teacher can clearly know the problems faced by his/her students.

According to Pianta (1999), positive students-teacher relationships are characterized by *open communication, as well as emotional and academic support that exist between students and teachers*. Students-teacher relationships become particularly important during early adolescence, as students move from the supportive environment of elementary school to the more disjointed atmosphere of a middle school or junior high.

Liberante (2012) states that when teachers are able to form positive student relationships and engage their students, learning becomes an enjoyable experience taking place in a balanced classroom atmosphere. Besides that, there will be no pressure in classroom. The students can share everything about their learning without tension on their teachers. Thus, it becomes interesting to study the role of TSR in learning to read through Jigsaw II.

By analyzing the theory of Jigsaw II, TSR, and problem on students' reading comprehension, there were four problems investigated, namely:

1. Is there any significant effect in reading comprehension between the students taught by using Jigsaw II and those taught by conventional teaching strategy?
2. Is there any interactional effect of teaching strategy and TSR level on students' reading comprehension?
3. Is there any significant effect in reading comprehension between the students having high close relationship with their

teacher taught by using Jigsaw II and those taught by conventional strategy?

4. Is there any significant effect in reading comprehension between the students having low close relationship with their teacher taught by using Jigsaw II and those taught by conventional strategy?

METHOD

To administer this research, *Posttest Only Control Group* with *2x2 factorial design* was applied. There were 92 eleventh grade students of SMAN 1 Denpasar in the academic year 2013/2014 included to be the sample. To get the sample, cluster random technique was applied. Then, questionnaire of students-teacher relationship was distributed to classify students' relationship level. The data involved students' reading comprehension and students-teacher relationship data. The students' reading comprehension was collected by multiple choice test and the students relationship with their teacher was collected by a questioner adapted from previous researcher. Before the instruments were used, validation process through tryout was administered. Then, the obtained data were analyzed by using descriptive and inferential statistical analysis. Descriptive analysis aimed at describing data by measuring mean and standard deviation. Meanwhile, inferential analysis aimed at testing the hypothesis. Inferential analysis was done by using Two-Way ANOVA which was followed by Tukey test to know interactional effect.

FINDING AND DISCUSSION

The calculation of descriptive analysis measuring mean and standard deviation to 6 groups of data can be presented in the table 1

Table 1 Sum of the Calculation of the Central Tendency and Dispersion

Group	Mean	Std Dev
J	82.5	5.85
CM	78.42	6.02
JHR	86.21	4.13
JLR	78.79	4.9
CMHR	77.94	5.67
CMLR	78.9	6.43

Notes:

J = Jigsaw II
CM = Conventional Strategy
HR = High Relationship
LR = Low Relationship
Std dev = Standard deviation

Based on table 1, it is known that (1) mean value of J is higher than CM, (2) mean value of JHR is higher than CMHR, and (3) mean value of JLR is lower than CMLR. In term of standard deviation (SD) value, SD value of CMLR is the highest value. It is followed by the value of CM, J,

CMHR, JLR, and JHR. However, this result could not be used to answer the research problems. To answer research problems, inferential analysis by Two-way ANOVA was applied. The result can be presented in table 2.

Table 2 Sum of the Results of Hypothesis Testing by Two-Way ANOVA

Source	F	Sig. (Probability)
Group	13.367	0.00
Relationship level (RL)	8.389	0.005
group*rl	14.071	0.00

To answer the first research question, it can be seen from the value of group (teaching method). From the table 2, it is known the sig value or probability of 0.00 which is lower than 0.05. It means that there was a significant effect in reading comprehension between the students taught with Jigsaw II and those taught with conventional strategy. Meanwhile, the second research question was answered by looking the value of group*rl. From the table 2, it was known that the value of group*rl of 0.00 which was lower than 0.05. It means that

there was a significant interactional effect on the implementation of teaching strategy (Jigsaw II and conventional strategy) and relationship level (high and low) on students' reading comprehension.

Since there was an interaction, it was followed by further analysis by Tukey test for two groups which were compared. The result of Tukey test can be seen in the table 3.

Table 3 Sum of the Tukey test

No	Compared groups	Q	Q table	Conclusion
1	JHR with CMHR	7.37	2.80	significant
2	JLR with CMLR	0.1	2.80	insignificant

The analysis of the result of Tukey test on the students having high relationship with their teacher shows Q value of 7.37 was higher than critical Q table value of 2.80, $\alpha = .05$. It means that there was a significant effect in reading comprehension between students having high relationship with their teacher taught by using Jigsaw II and those taught by using conventional strategy. However, this result was in contrast with the students having low relationship with their teacher. The table 3 shows Q value of 0.1 was lower than the critical Q table value of 2.80, $\alpha = .05$. It means there is no significant effect in reading comprehension between students having low relationship with their teacher between the students' taught by using Jigsaw II and those taught by using conventional strategy. Even though they were not different, but their mean scores were different. The mean score of students having low relationship with teacher taught with Jigsaw II of 78.79 which was lower than mean score of the students having low relationship with teacher taught with conventional strategy of 78.9. So, it can be concluded that mean score of students having low relationship with teacher taught with conventional strategy was higher than those taught with Jigsaw II. However, they did not affect significantly.

Based on the result of hypothesis testing by two-way ANOVA, it was discovered that the teaching method implemented during teaching and learning process significantly affected toward students' reading comprehension of eleventh grade students of SMAN 1 Denpasar in the academic year 2013/2014. It was proven by probability value of 0,000 which lower than 0,05 at 5% significant level ($\alpha = .05$). Further analysis showed that the mean score of the students taught with Jigsaw II (82.5) was higher than the mean

score of the students taught with conventional strategy (78.42). It means that Jigsaw II was significantly affected on students' reading comprehension. Based on the result of hypothesis testing and the analysis mentioned, it could be inferred generally that students' reading comprehension taught by using Jigsaw II was better than those taught by using conventional . It means that Jigsaw II implemented in reading has positive effect on reading comprehension of eleventh grade students of SMAN 1 Denpasar in the academic year 2013/2014.

The same finding was found by Nyeneng (2011), Kazemi (2012), and Adhami and Marzban (2014). Nyeneng discovered that there was a significant effect of Jigsaw technique on students' achievement in reading. It could be seen that the experimental group which treated in jigsaw treatment has better achievement on reading than the control group treated by using conventional strategy. Meanwhile, Kazemi (2012) proved that there was significant difference in reading after Jigsaw was implemented. So, it can be concluded that the Jigsaw has better effect on students reading achievement. Finally, Adhami and Marzban (2014) discovered that students' reading ability improved after Jigsaw was implemented. Besides reading ability, students' interest and motivation were also improved after they were taught by using jigsaw. At the end, they argued that jigsaw was the most effective and interesting way that could be used and applied to teach reading in high school.

Meyer and Ray (1999) state that reading comprehension is an active process of making sense out of text. It needs condition where they have more time to construct knowledge. Furthermore, Borich (2007) states that teaching reading which focuses on searching meaning

should be directed to constructivist perspective. Teaching reading should direct the students to work in small group cooperatively, reading to one another and asking and answering questions based on reading assignment. So, applying teaching strategy where the students can learn cooperatively during reading is a way to help students in constructing knowledge.

Jigsaw is cooperative teaching strategy where the students work in small group. In Jigsaw strategy, each team member is responsible for mastering part of the learning materials and teaching that part to the other team member (Arends, 2004). In reading, the students divide the part to be mastered then they teach them to their friends. It makes the students can learn from their friends. If they have problems in understanding, they may bravely ask their friend to repeat again their explanation.

Another conclusion from the result of hypothesis testing on the simple effect discovered that conventional method was inappropriate with the nature of teaching reading comprehension. Reading is a process of understanding text. It includes complex brain activities. So, the students face difficulty during reading. Here, sharing and discussing among friends are required. When they have difficulty, the students can share and discuss to their friends. It makes they mutually learn. If the students work individually, they will get stuck if they can not solve the difficulty that they face. In other words, it is concluded that conventional method focusing on individual learning does not contribute positively toward the reading comprehension of eleventh grade students of SMAN 1 Denpasar in the academic year 2013/2014. Conventional strategy applied in reading does not match because this kind of method does not provide opportunities for the students to share, discuss, and learn from their friends.

For further analysis, it is important to discuss whether the teaching method implemented in reading was the only factor which affected students' reading comprehension or not. Hughes & Chen (2011) state that a major factor affecting students' development is teacher-student relationship (TSR). The relationship

between students and teacher creates comfortable condition for the students' learning. This current research also aimed at finding whether TSR significantly affected on the development of students' reading comprehension or not.

The hypothesis testing done by Two-Way ANOVA discovered that there was a significant interactional effect between teaching strategy (Jigsaw II and conventional) and students-teacher relationship level (high and low levels) on students' reading comprehension. It was proven by probability value of 0.000. It meant that there was opposite result in students' reading comprehension affected by the teaching strategy and TSR level. Based on the result of mean calculation, it was true. However, it was not known whether or not the effect was significant. To prove it, Tukey test should be used.

The result of Tukey test showed that there was a significant effect in reading comprehension between students having high relationship with their teacher taught by using Jigsaw II and those taught by using the conventional strategy. The mean score of students having high relationship with their teacher taught with Jigsaw II of 86.21 was higher than mean score of students having high relationship with their teacher taught with Conventional strategy of 77.94. It means that Jigsaw II affected significantly on the reading comprehension of the students having high relationship with their teacher.

The same finding was also discovered by Sugiartawan (2010), Wedayanthi (2012), and DeTeso (2011). Both Sugiartawan (2010) and Wedayanthi (2012) discovered that students-teacher relationship contributed significantly on students' speaking skill. It was argued that the more positive teacher-students relationship, the higher students' speaking skill. Meanwhile, DeTeso (2011) discovered that the students-teacher relationship had a significant impact on academic outcomes, both directly and indirectly. High relationship makes the students are comfortable when they study.

Pianta (1999) argued that a supportive relationship between early elementary teachers and their students

fostered more emotionally healthy and academically oriented children and, if established and maintained, supported and shaped a student's development throughout the early school years and beyond. Research has supported Pianta and found that the quality of the students-teacher relationship helps to foster not only achievement but mediating factors (i.e., motivational and learning related processes) that are important to academic functioning.

Jigsaw II is a teaching strategy where the students get involve mostly during learning process. Here, the students also teach their friends based on their expertise. Because it is students-centered, the students might face difficulty or problems during reading process. the students having high relationship with their teacher are comfortable to discuss the problems. In addition, they bravely share what they face during reading and ask for guidance in reading. So, Jigsaw II is appropriate to be taught for the students having high relationship with their teacher.

It is different from the students having low relationship with their teacher. Low students-teacher relationship is mainly characterized by less communication between the students and teacher (Mantzicopoulos, 2005). The students are mostly closed where they do not share their problems to their teacher and peer. The students tend to be individualistic during learning. They are afraid to consult their problems to their teacher. these characteristics of students are not matched with the situation expected by Jigsaw II. This teaching strategy needs the students to share problems that they find during learning.

Next, it is important to know whether or not Jigsaw II also has positive effect on reading comprehension of the students having low relationship. The result of Tukey test showed there was no significant effect in reading comprehension between students having low relationship with their teacher between the students' taught by using Jigsaw II and those taught by using conventional strategy. From the descriptive analysis it was found out that the mean score of students having low relationship

with teacher taught with Jigsaw II was 78.79 which was lower than the mean score of the students having low relationship with teacher taught with conventional method (78.9). Even though the means score of the groups were different, but they were not significant. It means that low relationship with teacher did not significantly affect on students' reading comprehension.

Hamre and Pianta (2001) demonstrated that conflict in the student-teacher relationship reported by kindergarten teachers predicted achievement test scores, disciplinary infractions, and school suspensions through eighth grade. Conflict was a better predictor of sustained academic and disciplinary problems than were teacher ratings of students' behavior problems. That suggests that students' relational capacities may be more salient than behavior problems to students' ability to adjust to the classroom environment and thus a better indicator of future school difficulties. This research proved that how bad the effect of low relationship between students and teacher on their learning is. This low relationship makes a "gap" between students and teacher. as the consequence, students learning is difficult.

Conventional strategy needs the students to work individually. There is no rule that the students should work with their friends during learning. Individualistic students tend to be closed during learning. When they have problem or difficulty, they keep it. They prefer to solve it alone. If they have low relationship with the teacher, they tend to be comfortable because it is based on their characteristics.

McCombs and Whisler (1997) in Knoell (2012) offered five premises for helping each learner develops to their fullest potential, which included learning occurs best in an environment that contains positive interpersonal relationships and interactions and in which the learner feels appreciated, acknowledged, respected, and admired.

The premises indicate how important to create conducive learning environment for the students during learning. This condition can be occurred if the teacher can

create positive relationship with their students. The positive relationship will create ownership between students and teacher which makes the students learn comfortably.

CONCLUSION AND SUGGESTION

Based on the result of hypothesis testing, there are four conclusions that can be made. *First*, there is a significant effect in reading comprehension between the students taught by using Jigsaw II and those who taught by using conventional strategy. It was proven by the probability value of 0.000 which is lower than 0.05. The mean score of the students taught with Jigsaw II strategy (82.5) was higher than the mean score of the students taught with conventional (78.42). It means that Jigsaw II significantly affects on students' reading comprehension. *Second*, there was a significant interactional effect of teaching strategy (Jigsaw II and conventional method) and students-teacher relationship level (high and low levels) on students' reading comprehension. It was proven by the probability value of 0.00 which was lower than 0.05. *Third*, there was a significant effect in reading comprehension between students having high relationship with their teacher taught by using Jigsaw II strategy and those taught by using conventional . It was proven by the Qcounted value of 7.37 which was higher than Qcritical value was 2.80. The mean score of students having high relationship with their teacher taught with Jigsaw II strategy of 86.21 which was higher than mean score of students having high relationship with their teacher taught with Conventional of 77.94. It means that Jigsaw II significantly affects the reading comprehension of the students having high relationship with their teacher. *Fourth*, there was no significant effect in reading comprehension between students having low relationship with their teacher between the students' taught by using Jigsaw II strategy and those taught by using conventional . It was proven by Qcounted value of 0.1 which was lower than Qcritical value of 2.80.

Furthermore, based on the finding and conclusion, there are four suggestions suggested. *First*, since jigsaw II affects better on students' reading comprehension Jigsaw II should be used in teaching reading as an alternative teaching strategy to solve problems of students' low reading comprehension. *Second*, Since students-teacher relationship has significant role in contributing students' reading comprehension, the English teachers are expected to know the level of their students' relationship with them since it will influence the choice in implementing teaching strategy. Besides that, the English teacher should create the positive students-teacher relationship in reading instruction so that the students can share and consult problems that the students face during learning. When the students are opened, the teacher can easily give solution on the students' problems. *Third*, in implementing Jigsaw II strategy, students-teacher relationship should also be taken into account. As being found that the students having high relationship taught with jigsaw II strategy have higher score in reading comprehension than those taught with conventional . *Fourth*, in implementing Jigsaw II strategy, the teachers should be careful in organizing class. The group should be heterogenous, so collaboration can be occurred among group members.

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